We claim:

1. Deuterated rapamycin.

2. A rapamycin derivative containing a deuterium atom.

3. A pharmaceutical composition for the treatment of transplantation rejection, host vs. graft disease, graft vs. host disease, leukemia/lymphoma, hyperproliferative vascular disorders, autoimmune diseases, diseases of inflammation, solid tumors, and fungal infections comprising deuterated rapamycin or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

4. A deuterated rapamycin derivative according to claim 2 which is selected from the group consisting of 7-deutromethyl rapamycin, epi-7-deutromethyl rapamycin, 7,43-d_6-rapamycin, 31,42-d_2-rapamycin, glycosylated deuterorapamycin, and isomers thereof.

5. A pharmaceutical composition according to claim 3 comprising a deuterated rapamycin derivative selected from the group consisting of 7-deutromethyl rapamycin, epi-7-deutromethyl rapamycin, 7,43-d_6-rapamycin, 31,42-d_2-rapamycin, glycosylated rapamycin, and isomers thereof.

6. A method for the treatment of transplantation rejection, host vs. graft disease, graft vs. host disease, leukemia/lymphoma, hyperproliferative vascular disorders, autoimmune diseases, diseases of inflammation, solid tumors, and fungal infections comprising the step of administering to an animal in need thereof, an effective amount of deuterated rapamycin or a pharmaceutically acceptable salt thereof.

7. The method of claim 6 wherein the animal in need of treatment is a human.

8. The method of claim 6 wherein the deuterated rapamycin is selected from the group consisting of 7-deutromethyl rapamycin, epi-7-deutromethyl rapamycin, 7,43-d_6-rapamycin, 31,42-d_2-rapamycin, glycosylated rapamycin, and isomers thereof.

9. The method of claim 7 wherein the deuterated rapamycin is selected from the group consisting of 7-deutromethyl rapamycin, epi-7-deutromethyl rapamycin, 7,43-d_6-rapamycin, 31,42-d_2-rapamycin, glycosylated rapamycin, and isomers thereof.

10. A method of altering the pharmacokinetic activity of rapamycin comprising the step of replacing a hydrogen atom on a rapamycin molecule with a deuterium atom.

11. The method of claim 10 wherein a plurality of hydrogens atoms are replaced with a plurality of deuterium atoms.

12. The method of claim 11 wherein the hydrogen atom is located on a methyl group.

13. A pharmaceutical composition according to claim 3 in the form of a tablet.

14. All of the patentable subject matter disclosed above.